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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/938,585	08/27/2001	Mikihiro Kajita	Q65648	2717

7590	12/28/2005

SUGHRUE, MION, ZINN, MACPEAK & SEAS
2100 Pennsylvania Avenue, N.W.
Washington, DC 20037

EXAMINER
PAYNE, DAVID C

ART UNIT	PAPER NUMBER
2638	

DATE MAILED: 12/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>27 June 2005</u>.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,5-9 and 13-16* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 3, 5-9, 12-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections

set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 3, 5, 7-9, 12, 13, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Levinson US 5,019,769 (Levinson) in view of Glance US 4916705 A (Glance).

Re claims 1 and 13, Levinson disclosed

A method for detecting an abnormality of an optical module comprising the steps of: (a) detecting a

value of a current flowing through a specified spot of the optical module (e.g., col./line: 5/1-10); (b)

holding the detected value of the current in a memory (e.g., col./line: 9/16-21); (c) detecting a value of

a current flowing through the specified spot at every predetermined time (e.g., col./line: 9/22-30); (d)

obtaining a differential value between the value of the current held in the memory and the value of the

current newly detected (e.g., col./line: 9/5-15); and (e) generating alarm signal indicating a necessity

of preventive maintenance when the obtained differential value exceeds a predetermined threshold

value (e.g., col./line: 9/10-15), wherein the value of the current flowing through the specified spot is a

value of a current in a power line for supplying power to the optical module including a laser diode

driver (current flowing through resistor 179 of Figure 3, see col./line: 5/1-10), it is inherent that

measuring power across said resistor detects current from VCC). Levinson does not disclose that the

newly detected current is stored in memory. Glance disclosed taking a difference in current and

storing the new value in memory (col/line: 1/45 – 2/10; 5/44-50). It would have been obvious to one of

ordinary skill in the art at the time of invention to add a update and store feature similar to Glance's in

the system of Levinson. One is motivated as such since this is a well-known technique for

establishing close loop control of a parameter.

Re claims 3, Levinson disclosed

wherein the value of the current flowing through the specified spot is a monitor current value of an

optical output (w.r.t. claim 11, transmission light source) of the optical module (e.g., col./line: 13/60-

65). Note, it is inherent that voltage measurement across a known impedance is well known as a

current detector as Levinson disclosed in the aforementioned passage.

Re claims 5 and 12, Levinson disclosed

wherein the value of the current hold in the memory is a value of a current flowing through the

specified spot at the start time of the use of the optical module (e.g., col./line: 4/50-55).

Re claims 7 and 15, Levinson disclosed

wherein the detected value of the current flowing through the specified spot of the optical module is

an average value of currents for the predetermined time (e.g., col./line: 5/14-15).

Re claim 8, Levinson further disclosed

sending an alarm when the drive current exceeded a predefined level by a certain percentage which

is also understood as a ratio (see Levinson col./line: 9/7-11). Levinson does not disclose that the

newly detected current is stored in memory. Glance disclosed taking a difference in current and

storing the new value in memory (col/line: 1/45 – 2/10; 5/44-50). It would have been obvious to one of

ordinary skill in the art at the time of invention to add a update and store feature similar to Glance's in

the system of Levinson. One is motivated as such since this is a well-known technique for

establishing close loop control of a parameter.

Re claims 9 and 16, Levinson disclosed

An apparatus for detecting an abnormality of an optical module comprising: a current detector which detects a value of a current flowing through a specified spot of said optical module (e.g., col./line: 5/1-10); a memory which holds the value of the current detected by said current detector e.g., col./line: 9/16-21; an arithmetic circuit ((162) of Figure 3) which obtains a differential value (*w.r.t.* claim 10, ratio of a differential value) between the value of the current held in said memory and a value of a current newly detected by said current detector (e.g., col./line: 9/5-15); and an alarm circuit (e.g., col./line: 9/13, (162) of Figure 3) which generates alarm signal indicating a necessity of preventive maintenance when the differential value obtained by said arithmetic circuit exceeds a predetermined threshold value (e.g., col./line: 9/10-15), wherein the value of the current flowing through the specified spot is a value of a current in a power line for supplying power to the optical module including a laser diode driver (current flowing through resistor 179 of Figure 3, see col./line: 5/1-10). Levinson does not disclose that the newly detected current is stored in memory. Glance disclosed taking a difference in current and storing the new value in memory (col/line: 1/45 – 2/10; 5/44-50). It would have been obvious to one of ordinary skill in the art at the time of invention to add a update and store feature similar to Glance's in the system of Levinson. One is motivated as such since this is a well-known technique for establishing close loop control of a parameter.

3. Claims 6 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Levinson US 5,019,769 (Levinson) in view of Glance US 4916705 A (Glance).

Re claim 6, Levinson does not disclose

wherein the value of the current held in the memory is overwritten to the value of the current that is newly detected in the specified spot when a differential value is obtained. However it would have been obvious to one of ordinary skill in the art at the time of invention to overwrite old data in memory to conserve on the use of memory where intermediate data points are not needed. Furthermore, this technique is extremely well known in the art.

Re claim 14, Levinson does not explicitly disclose

wherein said memory includes a first memory and a second memory, said first memory receives and

holds a value of a current from said current detector, and sends out the value of the current held until

then to said second memory, said second memory holds the value of the current sent from said first

memory, and said arithmetic circuit obtains a differential value between the values of the currents

held in said first memory and said second memory. However, it would have been obvious to one of

ordinary skill in the art that the arithmetic calculations described in Levinson necessarily require

storing two values in separate memory register maps in order to perform a calculation as this is the

most basic function of an ALU in a microprocessor. Again, the claimed material is extremely well
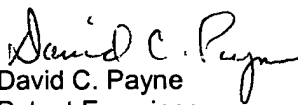
known in the art.

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David C. Payne whose telephone number is (571) 272-3024. The examiner can normally be reached on M-F, 7a-4p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dcp

David C. Payne
Patent Examiner
AU 2638